

**REPORT ON THE
CYMOTHOID ISOPODA OBTAINED BY THE F.I.S. "ENDEAVOUR"
ON THE COASTS OF QUEENSLAND, NEW SOUTH WALES,
VICTORIA, TASMANIA, AND SOUTH AUSTRALIA**

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(Contribution from the South Australian Museum)

[Read 8 August 1940]

PLATE XVIII

FAMILY CYMOTHOIDAE

The material herein dealt with was originally sent to New Zealand for examination by the late Dr. Chas. Chilton, but pressure of other work prevented him from reporting on it. When Dr. Chilton died the specimens were returned to the Australian Museum, and the Director of that Institution has been good enough to refer them to me for study. The "E" numbers cited refer to the registrations of the Australian Museum, where the specimens are housed.

SUBFAMILY CIROLANINAE

CIROLANA Leach

CIROLANA WOODJONESI Hale

Cirolana woodjonesi Hale, Trans. Roy. Soc. S. Aust., 48, 1924, p. 71, pl. v, and text fig. 2; and *loc. cit.*, 49, 1925, p. 137, fig. 5.

This species superficially resembles *C. rossi* Miers, which attains a length of over 30 mm. In Miers' species, however, the eyes when viewed from the side are narrower, the flagellum of the second antennae is longer and composed of a greater number of segments, while the furrows of the coxal plates are more oblique and on the last four pairs extend right to the inner (or dorsal) edge, just as in *C. tenuistylis* Miers (see Hale, *ut supra*, 1925, fig. 4); in *C. woodjonesi* these furrows terminate abruptly some distance from the edge.

Localities—A large number of individuals from Queensland: Norwest Island, Capricorn Group, 9 July 1910, "Brought up on bait while line fishing" (E. 4843). Tasmania: Elliott Cove, West Coast, 5 fathoms (E. 5349).

CIROLANA VIETA Hale

Cirolana vieta Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 150, fig. 11.

Twenty specimens, the largest 20 mm. in length. One is wrinkled obliquely as in the type, and others are less distinctly so marked, but in the majority the surface bears only fine transverse striae and punctures.

The oblique grooving may be due to the action of strong alcohol soon after an ecdysis, but the finer striae are distinctive, so that the specific name is not inapt.

The telson, which is damaged in the single type female, has a median longitudinal carina, and the apex is produced to a sharp point. In the male, the

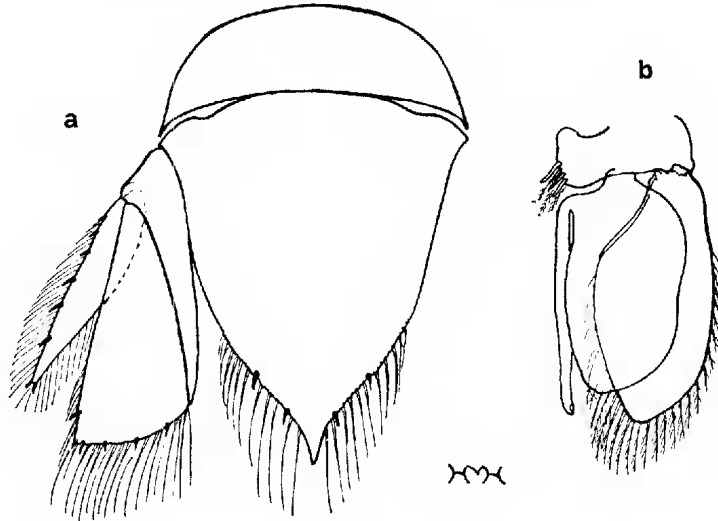


Fig. 1

Cirolana vieta, male: a, telson and uropod; b, second pleopod.

antennae are longer than in the female, and extend well beyond the end of the pleon.

Localities—South Australia: Sleaford Bay, 25 fathoms, 28 August 1909 (E. 4856); south of St. Francis Island, 35 fathoms (E. 4838); Loc. ? (E. 6600).

CIROLANA CORPULENTA Hale

Cirolana corpulenta Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 134, fig. 3.

A single female. Only one other specimen—the type female—has been recorded. The “Endeavour” example now examined is 5 mm. in length, but has the flagellum of the second antennae relatively longer than in the type, composed of 17 segments and a terminal style, and reaching back to beyond the hinder margin of the third pereon segment. The colour markings are much as in the type.

Locality—Tasmania: Elliott Cove, West Coast, 5 fathoms (E. 6757).

In January 1933, Mr. T. G. Roughley, Economic Zoologist at the Technological Museum in Sydney, reported that a sea-louse had appeared in great numbers in New South Wales, and was causing deaths of sharks and rays, eating into the coelome, and attacking the liver. The little predators temporarily held up the shark industry. Specimens sent to me for examination proved to be *C. corpulenta*.

Cirolana valida sp. nov.

♀ Form suboval, two and one-half times longer than wide. Surface sparsely and finely punctate, the tiny pits for the greater part arranged in irregular transverse lines. Cephalon rather deeply immersed in first peraeon segment, less than twice as wide as medial length; anterior margin emarginate, with an exceedingly minute, downbent, median process, not separating the first antennae; dorsum with a furrow extending along inner margins of eyes and continued across front of head, subparallel to anterior margin. Eyes pale, elongate, occupying antero-lateral portions of cephalon, barely visible in dorsal view, with the upper (inner) margin concave, nearly straight. First antennae reaching to end of fourth article of peduncle of second pair; proportions of articles of peduncle 5:3:7; flagellum short, twelve-segmented. Second antennae reaching back to beyond hinder angles of second peraeon segment; first two articles of peduncle short, subequal in length, together as long as fourth article; proportions of third to fifth segments 7:6:10; flagellum composed of 28 articles. Frontal lamina linear, more than three times longer than greatest width, slightly widened near anterior apex, which is acute. Clypeus wider and much shorter than labrum. Maxilliped rather stout, the marginal hairs stiff. First peraeon segment longer than second; second to fifth successively increasing slightly in length; seventh shorter than any of the others. Coxal plates of second and third free peraeon segments each with an oblique, curved furrow (in addition to the usual "submarginal" furrow); plates of fourth segment with obsolescent furrow and remainder without furrow, although some punctures faintly outline what would appear to be the sites of obsolete grooves; last four pairs extending beyond level of hinder margins of their respective segments, the last pair reaching to beyond the postero-lateral angles of the second pleon segment. All segments of pleon exposed; first largely concealed beneath last peraeon segment and with postero-lateral angles almost hidden by last pair of coxal plates; postero-lateral angles of second segment subacute, those of third and fourth acute, those of fifth concealed. Telsonic segment subtriangular with apex rather angularly rounded, furnished with plumose hairs and about 20 short spines; its length less than three-fourths basal width. Uropods not quite reaching to end of pleon; exopod narrow, lanceolate, more than four times longer than wide and barely more than one-half greatest width of endopod, which is two and one-half times as long as wide, with apex rounded, outer margin fairly straight, and inner, behind protopodal process, rounded. Peraeopods stout; third joint of first three pairs expanded distally and armed with stiff setae on distal and inner margins, and with three or more spines near inner distal angle; outer distal angle of fourth segment of first three pairs forwardly produced almost to middle of length of sixth segment, with the apex armed with setae and two or more strong spines; fourth, fifth and sixth segments of anterior peraeopods with compound spines on inner margin. (fig. 2 c). Second segment of posterior limbs widened (that of the seventh one-half as wide as long). On the seventh peraeopods the

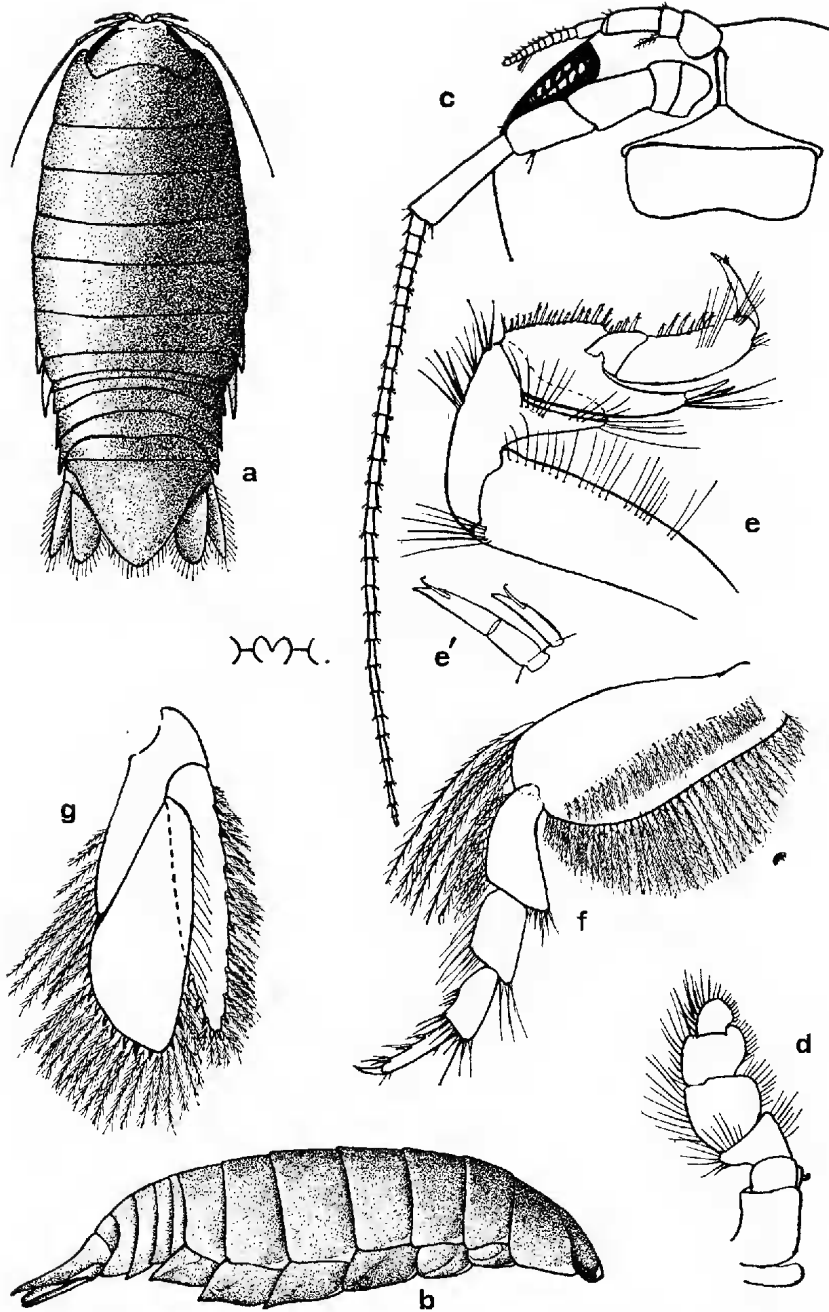


Fig. 2

Cirolana valida, type female: a and b, dorsal and lateral views; c, antennae, frontal lamina, clypeus and labrum; d, maxilliped; e, first peraeopod; e' spines of first peraeopod; f, seventh peraeopod; g, uropod.

inner margin is not set with plumose natatory hairs, but the inner distal margin has a dense plume almost equal in length to the segment; the outer margin bears dense plumose hairs for its whole length, as does also the inferior longitudinal ridge

Colour, in alcohol, greyish white. Length, 31 mm.

Locality—East of Flinders Island, Bass Strait, 200-300 fathoms, December 1913. (Type in Australian Museum, Reg. No. E. 4814.)

This large species in some respects resembles the New Zealand *C. rossi* Miers,⁽¹⁾ but differs in that the posterior coxal plates have no distinct oblique grooves, the form is stouter, the first antennae are relatively slightly longer, and the uropoda are different. It is close to *C. borealis* Lilljeborg,⁽²⁾ but has the eyes more elongate (although less visible in dorsal view) and even straighter on the upper margin, while the first two pairs of coxal plates have a distinct oblique furrow, not merely "a short rudiment of an impressed line"⁽³⁾ and the others obsolete traces of grooves. Further, *C. borealis* has a fringe of dense hair on both inner and outer margins of the second segment of the posterior peraeopods (whereas most of the inner margin is bare in the new species) and the uropoda are different, the endopod being more parallel-sided.

In some respects, *C. valida* is close to *C. hirtipes* M. Edwards, but the last-named species differs in having well-marked furrows on all the coxal plates, in the narrower endopod of the uropods, and in the number of spines on the legs.

I have to express my grateful thanks to Dr. Keppel H. Barnard who kindly sent me a specimen of *C. hirtipes* from East London, South Africa, for comparison with *C. valida*.

BATHYNOMUS A. Milne Edwards

BATHYNOMUS ? AFFINIS Richardson

(Pl. xviii)

Bathynomus affinis Rich., Bur. of Fish. Doc. No. 736, Washington, 1910, p. 4, fig. 1.

There is before me a single specimen, 119 mm. in length and 45 mm. in greatest width; unfortunately, it is abnormal insofar as the telson and uropoda are concerned. While undoubtedly close to *B. doderleini* Ortman,⁽⁴⁾ it differs from that species in the following characters. The body is relatively narrower, and the eyes are not so deep in lateral view, appearing more narrowly subtriangular than as figured by Milne Edwards and Bouvier for *B. doderleini*. The telson is proportionately narrower and apparently had nine (instead of seven) teeth in the posterior margin (pl. xviii, fig. 2) while the exopod of the uropoda is not subtriangular, but subrectangular. The last four pairs of coxal plates bear conspicuous carinae, and the second antennae extend only to the hinder margin of

(1) Miers, Ann. Mag. Nat. Hist., (4) 17, 1876, p. 228.

(2) Lilljeborg, Ofvers. Vet. Akad. Förh., 1851, p. 23.

(3) Hansen, Journ. Linn. Soc., 29, 1905, p. 342.

(4) M. Edw. and Bouvier, Mem. Mus. Comp. Zool., Harvard, 27, 1902, p. 159 pl. vii-viii.

the second thoracic segment (to or beyond posterior edge of fourth segment in *B. doderlevini*,⁽⁵⁾) and consist of less than 50 segments. In the conspicuous coxal carinae, and shape of the exopod of the uropoda and telson, the specimen agrees with *B. affinis*; the posterior margin of the endopod of the uropod, however, is not almost straight, and the outer postero-lateral angle is not "abruptly produced in an acute process or tooth," although the absence of this last character may be due to damage.

Locality—Victoria: South of Gabo Island, 200 fathoms (E. 6215).

SUBFAMILY CORALLANINAE

Argathona parca sp. nov.

♀ Form suboval, narrow, more than three times longer than greatest width. Surface smooth. Cephalon twice as wide as medial length, with a small process which does not separate first antennae. Eyes well separated. First antennae reaching to end of fourth article of peduncle of second; peduncle two-segmented, the second article three-fifths as long as the first; flagellum with eleven articles and a tiny sub-segment at base between lash and peduncle (fig. 3c). Second antennae slender, reaching to middle of length of fourth peraeon segment; proportions of segments of peduncle (in cleared mount, taking greatest lengths) 3:2:3:7:7; flagellum half as long again as peduncle, composed of 19 articles. Frontal lamina narrow, almost spatulate in shape. Clypeus wide, Δ -shaped. Mandibles with molar process moderately prominent (fig. 3d); palp with first article more than one-half as long as second and a little longer than the third. Outer lobe of first maxilla terminating in the usual strong claw, at the base of which is a spinule; inner lobe apically subtruncate and somewhat expanded. Second maxillae shorter, with simple apex capped with two feeble spines. Palp of maxillipeds four-segmented; structure shown in fig. 3g. Coxal plates each with the usual pair of furrows; posterior angles of only the last two pairs subacute and reaching back beyond hinder margins of peraeon segments. First pleon segment almost concealed beneath last thoracic segment; lateral portions of fifth segment overlapped by fourth. Telsonic segment long, its medial length almost equal to basal width; evenly tapering to the rounded extremity. Uropods not reaching to end of pleon; protopod with inner process rather short and stout, extending to middle of length of endopod, which is wide, subtriangular in shape, rounded with posterior margins somewhat flattened. Peraeopods terminating in a single claw; anterior pairs armed with relatively few spines.

Colour, in alcohol, brownish-yellow. Length, 8 mm.

Locality—Queensland: off Hummocky Island, 30 July 1910, from eye of Queensland Groper. (Type in Australian Museum, Reg. No. E. 6787.)

(5) Rich., Proc. U.S. Nat. Mus., 37, 1910, p. 78.

The single specimen described above was taken in company with eight examples of *Aega cyclops* on the eye of the abovementioned fish. The mandibles resemble those of *A. reidi* Stebbing⁽⁶⁾ but, in general, the new form is easily separated from any of the other eight members of the genus.

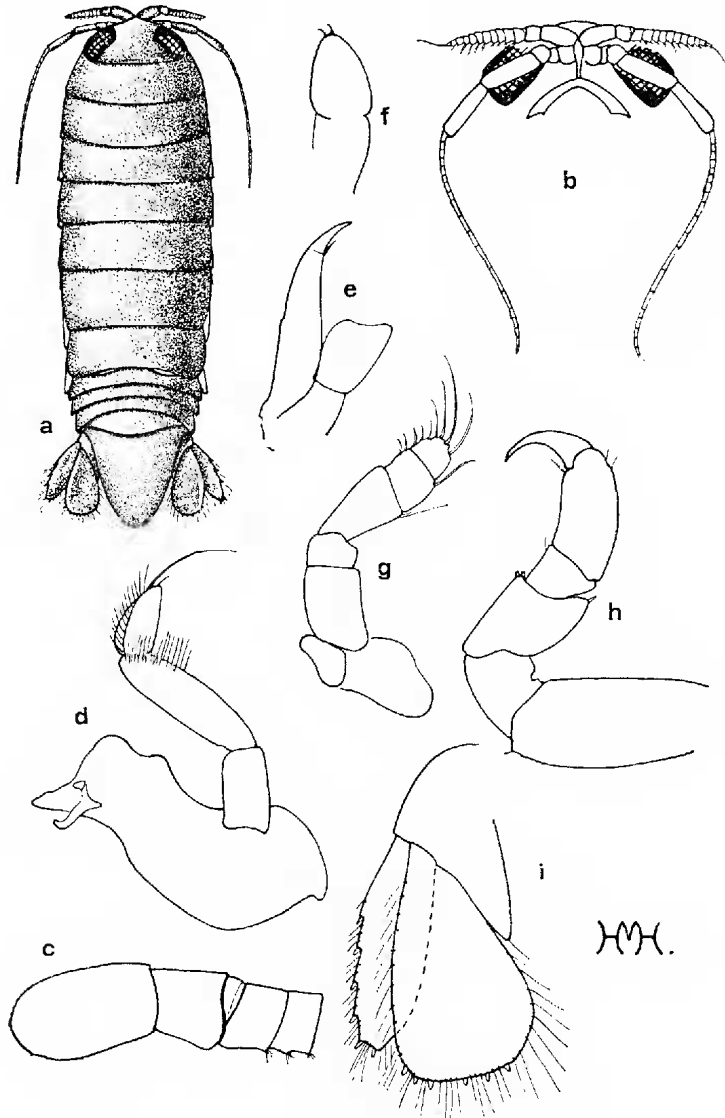


Fig. 3

Argathona parca, type female: a and b, dorsal view; b, antennae, frontal lamina and clypeus; c, peduncle and base of flagellum of first antenna; d, mandible; e and f, first and second maxillae; g, maxilliped; h, first peraeopod; i, uropod.

(6) Stebb., Trans. Linn. Soc., 14, 1910, p. 100, pl. ix, A.

SUBFAMILY AEGINAE

AEGA Leach

AEGA DESHAYSIANA (H. Milne Edwards)

Rocinela deshayiana M. Edw., Hist. Nat. Crust., 3, 1840, p. 243.

Aega deshayiana Sch. and Mein., Naturh. Tidsskr., (3) 12, 1879, p. 360, pl. viii, fig. 7-9; Norman, Ann. Mag. Nat. Hist., (7) 14, 1904, p. 434, pl. xii, fig. 1-4, and pl. xiii, fig. 10-11; Rich., Proc. U.S. Nat. Mus., 27, 1904, p. 674.

Aega antillensis Sch. and Mein., *loc. cit.*, p. 361, pl. viii, fig. 10-13; Rich., Proc. U.S. Nat. Mus., 23, 1901, p. 521, and Bull. U.S. Nat. Mus., 54, 1905, p. 170, fig. 149; Thielemann, München Abh. Akad. Wiss., 2, Suppl. 3, 1911, p. 26, pl. i, fig. 1-2; Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 176, fig. 24.

Aega excisa Rich., Wash. Bur. of Fish., Doc. No. 736, 1910, p. 11, fig. 11.

Five examples, the largest 57 mm. in length. I have also recently seen a specimen in the Australian Museum from "Ontong", Java, near British Solomons, collected by H. Hogbin, 22 June 1918.

Localities—New South Wales: Byron Bay, from cloaca of Tiger Shark (E. 4858). Victoria: off Gabo Island, 80 fathoms and 200 fathoms (E. 4763 and 4837). Tasmania: off coast (E. 5353). South Australia: off Marsden Point, Kangaroo Island (E. 4865).

AEGA SERRIPES II. Milne Edwards

Aega serripes M. Edw., Hist. Nat. Crust., 3, 1840, p. 241; Sch. and Mein., Naturh. Tidsskr., (3) 12, 1879, p. 355, pl. viii, fig. 1-4; Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 171, fig. 21.

Localities. Seven examples from the following—Tasmania: off Falmouth, 60-70 fathoms (E. 6596); Oyster Bay, gill-parasite of Skate (E. 4844); off east coast of Flinders Island, Bass Strait (E. 5673).

AEGA ANGUSTATA Whitelegge

Aega angustata Whitel., Mem. Aust. Mus., 4, 1901, p. 232, fig. 21a-21f; Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 170, fig. 20.

This species is rather close to *A. dofvini* Thielemann⁽⁷⁾ but, according to the description, the last-named species has the frontal lamina subtruncate in front (whereas in *A. angustata* it is rounded anteriorly) and the first antennae are very different.

I have recently examined further specimens of *A. angustata* taken from Sawsharks in New South Wales, and now in the Australian Museum. Eight examples were secured by the "Endeavour", the largest being 29 mm. in length. In a specimen only 10 mm. in length, the serrations of the telson and uropoda are relatively more pronounced than in larger representatives.

Localities—Victoria: off Gabo Island, 80 fathoms (E. 6778). Tasmania: Oyster Bay (E. 6774); "Tasmanian coast" (E. 6779); Flinders Island, Bass Strait, from a shark (E. 4840, 2 May 1909). Great Australian Bight: 60-80 miles west from Eucla, 80-120 fathoms (E. 6763).

⁽⁷⁾ Thielemann, München Abh. Akad. Wiss., ii, Suppl. 3, 1911, p. 28, fig. 28-34.

***Aega fracta* sp. nov.**

♂ Form broadly oval, little more than twice as long as wide. Cephalon two and three-fourths times as long as medial length; anterior margin rounded, with a tiny median triangular process extending downwards and back between the bases of the first antennae and meeting the very small frontal lamina. Eyes large, oblong, contiguous (four facets being in contact) occupying the greater part of dorsum of cephalon but leaving a space anteriorly and a larger area posteriorly. First antennae reaching well beyond end of peduncle of second antennae; proportions of segments of peduncle 13:10:23; flagellum slightly longer than peduncle, composed of eleven articles and a terminal style. Second antennae reaching back to slightly beyond hinder margin of second peraeon segment; the first and second segments of the peduncle are subequal in length; the proportions of the second to fifth (in a cleared mount) are 2:3:4:5; flagellum one-half as

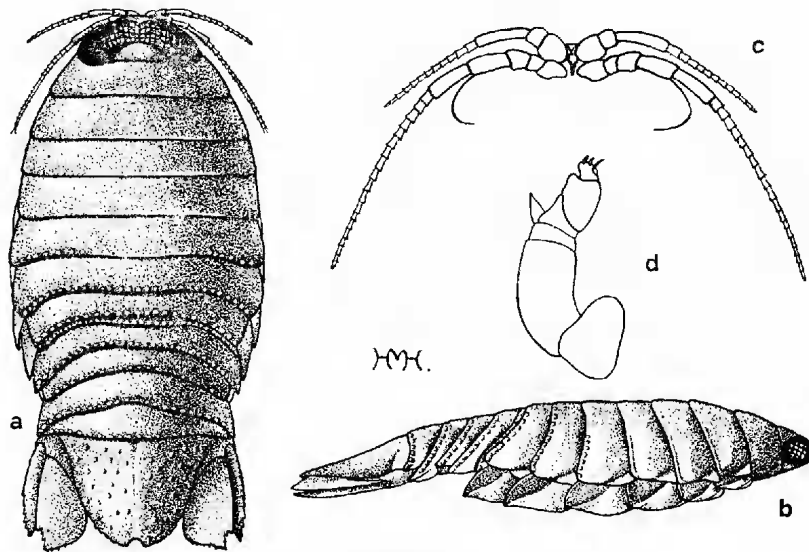


Fig. 4

Aega fracta, type male: a and b, dorsal and lateral views; c, antennae and frontal lamina; d, maxilliped.

long again as peduncle and composed of 19 articles. Segments of peraeon with surface punctate, subequal in length; seventh shorter than any of the others. Coxal plates each with two furrows, the inner (upper) of which runs from the postero-lateral angle to a point just posterior to the inner anterior angle in the first pair, and successively further back from this angle in remainder; postero-lateral angles of first three pairs obtuse, of fourth pair subacutely rounded, and of last two pairs acute. Last two peraeon segments and first five pleon segments with hinder margins finely beaded. First pleon segment partly concealed. Telson one-half as wide again as median length; rounded with margin serrulate and with a small U-shaped terminal incision; surface studded with minute tubercles. Exopod of uropod a little shorter than endopod (which attains to level

of end of telson), suboval in shape, pointed apically, and with five small spines (set in tiny notches) on outer margin and two to three on inner; endopod truncate, with inner posterior angle rounded and outer subacute; hinder margin crenulate, with several short, stout spines; outer margin with a shallow but distinct incision at third fourth of its length; posterior to this notch the edge is crenulate and bears two spines. The pereopods (fig. 5. a-b), call for no special comment.

Colour, in alcohol, white. Length, 14.5 mm.

Locality—"Off Tasmanian Coast" (type in Australian Museum, Reg. No. E. 6747).

Several other species of the genus have a small terminal incision in the telson, but only two also have the eyes contiguous. These are *A. approximata*

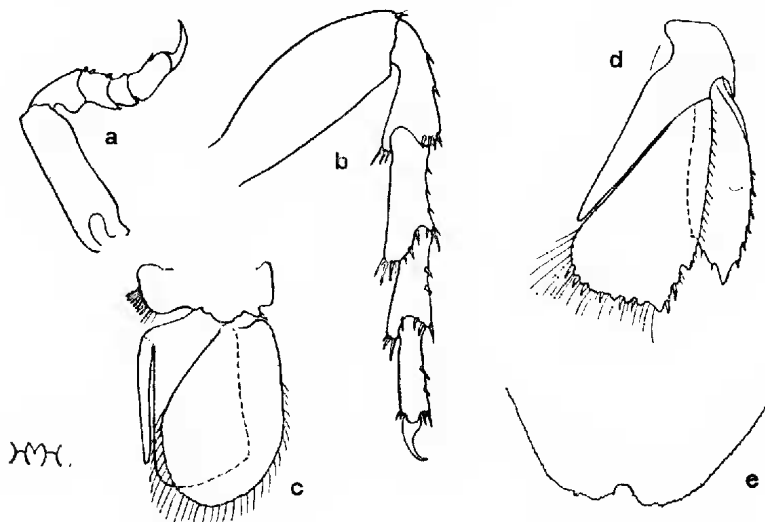


Fig. 5

Acya fracta, type male: a and b, first and seventh pereopods; c, second pleopod; d, uropod; e, apex of telson.

Richardson⁽⁸⁾ and *A. incisa* Schioedte and Meinert⁽⁹⁾. *A. fracta* differs from Richardson's species in having fewer segments in the flagellum of the first antennae, in the U-shaped incision of the telson ("V-shaped" in *A. approximata*) and in not having the "outer post-lateral angles of all the epinera acute"—indeed, in *A. fracta*, only the last three pairs can be said to be at all acute. *A. incisa* also has more segments (16) in the flagellum of the first antennae, while the posterior angles of the last three pairs of coxal plates are very acute and the body is relatively narrower; further, in the new species, the carinae of the first three pairs of coxal plates (as shown in fig. 4b) do not extend from the postero-lateral angle to the antero-lateral angle as in *A. incisa*.

⁽⁸⁾ Rich., Wash. Bur. Fish., Doc. No. 736, 1910, p. 15.

⁽⁹⁾ Sch. and Mein., Naturh. Tidsskr., (3) 12, 1879, p. 373, pl. x, fig. 1315.

AEGA CYCLOPS Haswell

Aega cyclops Hasw., Proc. Linn. Soc., N.S.W., 6, 1881, p. 192, and Cat. Aust. Crust., 1882, p. 285; Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 180, fig. 26, a-f, and *loc. cit.*, 50, 1926, p. 233, fig. 20, a-d.

A series of eleven specimens of this little species shows that apparently there is some slight variation in the relative size of the head and slenderness of the body, although this appearance may be due, in part at least, to differences of extension between the segments. The eyes vary in size, but the extreme conditions may well be illustrated by my two figures (*ut supra*).

Localities—Victoria: off Gabo Island, 80 fathoms (E. 6776). Eastern Slope, Bass Strait (E. 6752). Tasmania: Hummocky Island, taken from eye of a Groper, 30 July 1910 (E. 4839); off Maria Island, 78 fathoms (E. 6602).

***Aega concinna* sp. nov.**

♂ Body oval, two and one-half times as long as greatest width. Dorsum with evenly punctate surface; an impressed punctate, longitudinal median line on telson. Cephalon twice as wide as medial length, with a median frontal process, which almost separates the first antennae dorsally, and is keeled below, the keel (not the point) meeting the frontal lamina. Eyes large, well separated, the narrowest interocular space being equal to one-half the greatest diameter of an eye. First antennae reaching to middle of last segment of peduncle of second pair; with first two segments of peduncle subequal in length, flattened and considerably expanded, the width of the first being greater than its length; inner anterior portion of second segment produced to level of two-thirds of length of the third, which is slender, not expanded, slightly shorter than either the first or second segments, and equal in length to the nine-segmented flagellum. Second antennae reaching to a little beyond middle of length of first peraeon segment, proportions of segments of peduncle 5:5:5:11:16; flagellum shorter than peduncle, 14-segmented. Frontal lamina about as wide as long, broadest and roundly subtruncate in front; ventral face concave.

First, fourth, fifth and sixth peraeon segments subequal in length, each longer than any of others, and about same length as cephalon. Coxal plates slightly visible in dorsal view; each with two furrows, the inner of which reaches to the inner anterior angle in the first two pairs only (see fig. 6 b); fourth to sixth pairs successively reaching a little further back beyond level of hinder margins of their segments; more markedly acute and produced. All segments of pleon conspicuous, postero-lateral angles of first four subacute. Telsonic segment a little wider than long; margin evenly rounded, finely and rather irregularly crenulate posteriorly. Uropods not reaching quite to level of apex of pleon; protopod produced to end of inner edge of endopod, which is obliquely truncate posteriorly, with outer and inner posterior angles rounded; exopod suboval, barely shorter, but narrower, than endopod. Second and third pairs of peraeopods with propodus produced, the process extending to middle of length of dactylus.

Colour, in alcohol, greyish-brown. Length, 30 mm.

Locality—Tasmania: Entrance to Oyster Bay, 30 July 1909. (Type in Australian Museum, Reg. No. F. 6740.)

In the shape of the first antennae and the propodal processes of the second and third peraeopods this species approaches *A. angustata* Whitelegge,⁽¹⁰⁾ but in

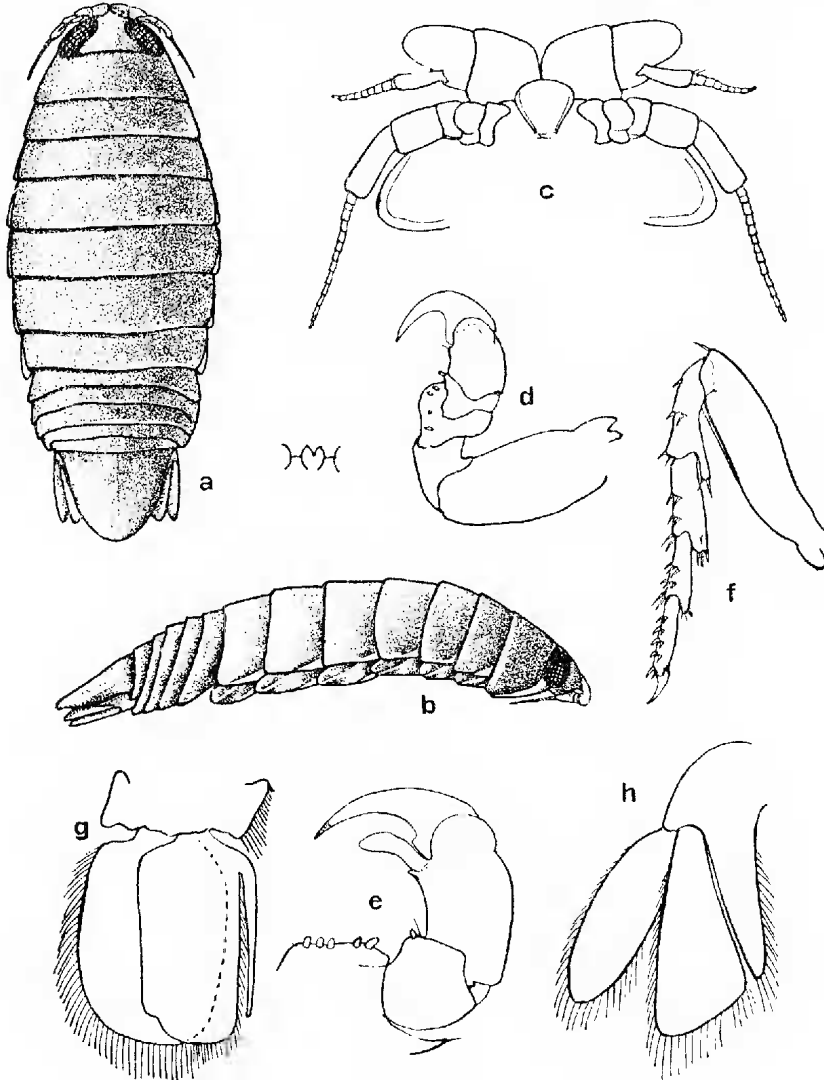


Fig. 6

Aegæ concinna, type male: a and b, dorsal and lateral views; c, antennae and frontal lamina; d, first peraeopod; e, distal portion of third peraeopod; f, seventh peraeopod; g, second pleopod; h, uropod.

⁽¹⁰⁾ Whitel. Mem. Aust. Mus., 4, 1901, p. 232, fig. 21 a-21 f.

⁽¹¹⁾ Whitel., *loc. cit.*, p. 229, fig. 20 a-20 f.

other respects is entirely different. It resembles *A. australis* Whitelegge⁽¹¹⁾ in some characters, but differs in the two abovementioned characters, in the larger eyes, shorter second antennae, shape of frontal lamina and telson, uropods, etc.

AEGA NODOSA Schioedte and Meinert

Aega nodosa Sch. and Mein., Naturh. Tidsskr., (3) 12, 1879, p. 367, pl. ix, fig. 1-3; Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 178, fig. 25, a-g.

Schioedte and Meinert described a male, while previously the writer has examined only a female. There is now before me a male, 16 mm. in length, from the type locality, but which differs from the type in having mere traces of tubercles on the hinder margin of either the sixth or seventh peraeon segments; they are more distinct, however, near the posterior edges of the first five pleon segments, but even there, are not very conspicuous.

Larger nodes (absent in the female described by me) are present as in the type male, but their disposition is slightly different, in that on each side of the elevation of the sixth peraeon segment is a less conspicuous node; there is the merest indication of a median elevation on the fourth pleon segment, but on the fifth there is a moderately large tubercle on each side of the hinder edge.

The uropods resemble those of the type male more than of the female previously described. The appendix masculina is five-sixths as long as the inner branch of the second pleopods.

Locality—Tasmania: Eastern Slope, Bass Strait (E. 6751).

AEGA VIGILANS Haswell

Rocinela vigilans Hasw., Proc. Linn. Soc., N.S.W., 5, 1881, p. 472, pl. xvi, fig. 2, and Cat. Aust. Crust., 1882, p. 285; Miers, Zool. "Alert", 1884, p. 304; Rich., Proc. Amer. Philos. Soc., 37, 1898, pp. 9-10.

Aega dubia Rich., Wash. Bur. Fish., Doc. No. 736, 1910, p. 12, fig. 12.

Aega vigilans Hale, Trans. Roy. Soc. S. Aust., 49, 1925, p. 174, fig. 23 a-g; Nierstrasz, Mem. Mus. Roy. d'Hist. Nat. Belgique, 3, 1930, p. 4, fig. 2, and "Siboga" Exped., Leiden, Mon., 32 c, 1931, p. 180.

A single immature specimen, 13.5 mm. in length, was taken in Queensland waters.

Locality—Queensland: 20 miles N.N.E. of Double Island Point, 30 fathoms (E. 6317).

SUBFAMILY CYMOTHOINAE

NEROCILA Leach

NEROCILA LATICAUDA Schioedte and Meinert

Nerocila blainvillei Sch. and Mein., Naturh. Tidsskr., (3) 13, 1881, p. 78, pl. vi, fig. 11-12 (*nec* M. Edw.).

Nerocila laticauda Sch. and Mein., *loc. cit.*, p. 81, pl. vi, fig. 14-15; Whitel., Mem. Aust. Mus., 4, 1901, p. 235; Hale, Trans. Roy. Soc. S. Aust., 50, 1926, p. 203, fig. 2-3.

Locality—South Australia: 50 miles south of Cape Wiles, 75 fathoms (E. 6758).

NEROCILA ORBIGNYI (Guérin)

- Ichthyophilus orbignyi* Guérin, in Bory de St., 5, Exp. Morée (Crust.), 1832, p. 47.
- Nerocila maculata* M. Edw., Hist. Nat. Crust., 3, 1840, p. 253; Sch. and Mein., Naturh. Tidsskr., (3) 13, 1881, p. 50, pl. iii, fig. 7-8; Bonnier, Bull. scient. dip. du Nord, (2) 10, 1887, p. 137.
- Nerocila affinis* M. Edw., *loc. cit.*, p. 253.
- Cilonera macleayi* White and Doubleday, in Dieffenbach, Travels in New Zealand, 1843, p. 268.
- Nerocila latiuscula* Dana, Rep. Crust. U.S. Expl. Exped., 13, 1853-55, p. 758, pl. 1, fig. 7 a-b; Sch. and Mein., *loc. cit.*, p. 76, pl. vi, fig. 9-10.
- Nerocila brasiliensis* Dana, *loc. cit.*, p. 759, pl. 1, fig. 8 a-e.
- Nerocila aculeata* Dana, *loc. cit.*, p. 760, pl. 1, fig. 9 a-c (*nec* H. M. Edw.).
- Nerocila falclandica* Cunningham, Trans. Linn. Soc., 27, 1871, p. 500, pl. lix, fig. 2.
- Nerocila imbricata* Miers, Cat. Crust. N. Zeal., 1876, p. 107.
- Nerocila neopolitana* Sch. and Mein., *loc. cit.*, p. 41, pl. ii, fig. 9-16; Norman and Scott, Crust. Devon and Cornwall, 1906, p. 39.
- Nerocila adriatica* Sch. and Mein., *loc. cit.*, p. 45, pl. iii, fig. 1-4.
- Nerocila orbignyi* Sch. and Mein., *loc. cit.*, p. 55, pl. v, fig. 1-2; Monod, Rev. Zool. and Bot. Africanes, 21, 1931, p. 10, fig. 5-11; Barnard, Ann. S. Afr. Mus., 32, 1940, p. 403.
- Nerocila cephalotes* Sch. and Mein., *loc. cit.*, p. 60, pl. iv, fig. 16-18; Van Name, Bull. Amer. Mus. Nat. Hist., 43, 1920, p. 53, figs. 6-9; Monod, Bull. Com. Etud. Hist. Sci. Afr. Occident. Franc., 9, 1924, p. 436.
- Nerocila novae-zelandiae* Sch. and Mein., *loc. cit.*, p. 70, pl. v, fig. 10-11.
- Nerocila trailli* Filhol, Rec. Mem. passage de Venus, 3, 1882, p. 451.
- Nerocila macleayi* Miers, Rep. Zool. "Alert", 1884, p. 301; Chilton, Trans. N. Zeal. Inst. (6) 23, 1891, p. 68, pl. xi, fig. 1 a-c, 2 a-b; Hale, Trans. Roy. Soc. S. Aust., 50, 1926, p. 206, fig. 4-5.
- Nerocila laticeps* Bovallius, Bih. K. Svenska Vet.-Akad. Hand., 12, 1887, p. 10, pl. ii, fig. 23-26, and pl. iii, fig. 27-28.
- Nerocila rhabdota* Monod, *loc. cit.*, 1924, p. 437 (*nec* Koelbel).
- Nerocila armata* Barn., Ann. S. Afr. Mus., 20, 1925, p. 390.

Locality—Tasmania: off Storm Bay, 17 July 1909 (E. 5677) and on Elephant Shark—*Callorhynchus milii* (E. 4848) and "off Tasmanian coast" (E. 6745).

***Nerocila monodi* sp. nov.**

Nerocila serra Hale, Trans. Roy. Soc. S. Aust., 50, 1926, p. 208, fig. 6 (*nec* Sch. and Mein.).

Dr. T. Monod has very kindly communicated to me the following facts and comments, supplementary to a note sent by him to Dr. Nierstrasz.⁽¹²⁾ Schioedte and Meinert, when describing *N. serra*,⁽¹³⁾ overlooked the fact that Bleeker⁽¹⁴⁾ had previously described the same species under the name of *N. trivittata*.

Dr. Monod has examined specimens of *N. trivittata* from Malaysia and India, and finds that these agree with *N. serra* of Schioedte and Meinert, and differ from the examples described by me as *N. serra*, in having the epimerae of the posterior thoracic segments narrower and the endopod of the uropoda serrated on the outer edge only. He further states that in the British Museum there are three specimens similar to the Australian examples; two of these, respectively, 22 mm. and 28 mm. in length, are from Dume Island, New Guinea, and the third is from the mouth of a fish taken in the Louisiade Archipelago. Comparing the

⁽¹²⁾ Nierstrasz, Siboga Exped., Mon., 32 c, p. 124 (footnote).

⁽¹³⁾ Sch. and Mein., Naturh. Tidsskr., (3) 13, 1881, p. 17, pl. i, fig. 12-14.

⁽¹⁴⁾ Bleeker, Verh. Naturk. Ver. Nederlandsch Indië, 2, 1857, No. 5, p. 24.

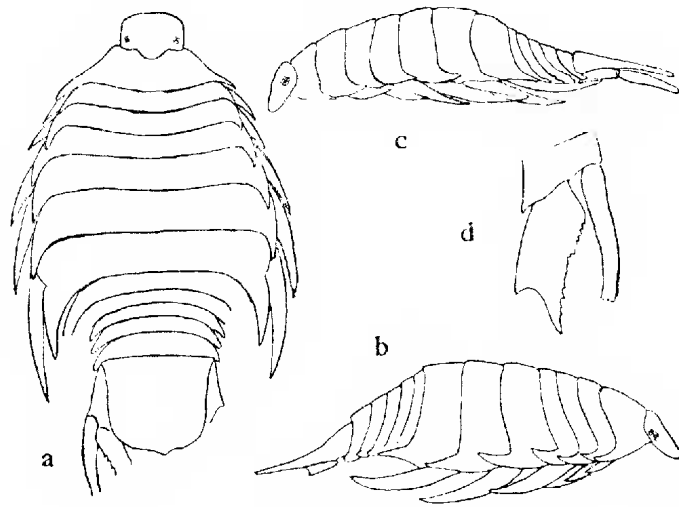


Fig. 7

Nerocila trivittata: a and b, dorsal and lateral views of 20 mm. ovigerous female from Malaysia; c and d, lateral view and uropod of 24 mm. non-ovigerous female from India (British Museum, *del* T. Monod).

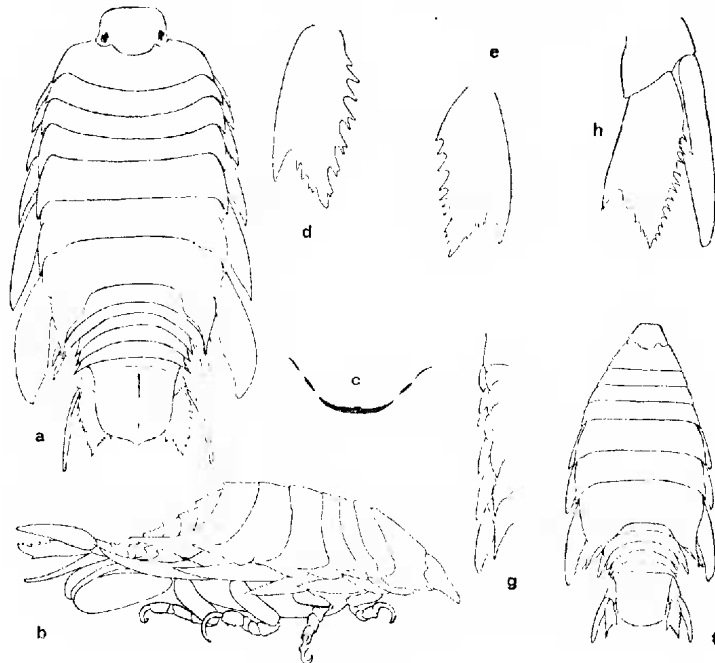


Fig. 8

Nerocila monodi: a and b, dorsal and lateral views of 28 mm. ovigerous female from New Guinea; c, transverse section of caudal fan of same; d and e, endopoda of uropoda of 22 mm. ovigerous female from New Guinea; f, dorsal view of 23 mm. ovigerous female from Louisiade Archipelago; g and h, side plates and uropod of same (British Museum, *del* T. Monod).

28 mm. female with a female of *N. trivittata*, he found also that in the former the telson is concave, whereas in *N. trivittata* it is flat. Dr. Monod was good enough to send me a number of figures (here reproduced) of the specimens he discusses, and these leave no doubt as to the correctness of his diagnosis.

There are now before me three adult females, 22 mm. to 26 mm. in length. In these, the hinder angles of the posterior peraeon segments are more produced than in the specimen figured by me in 1926, and in one example they extend back to the level of the postero-lateral angles of the fifth pleon somite. As in the other Australian examples examined by me, the telsonic somite is very slightly convex or flat dorsally, with a low but distinct median carina and with the sides a little upturned, producing the effect of slight lateral gutters.

Locality—Queensland: 27° south-east of Pine Peak, 1 Aug. 1910 (E. 4861).

Range—Queensland: Great Palm Island, from *Lutianus* sp. (type ovigerous female, in South Australian Museum, Reg. No. C. 290; see Hale *ut supra*, p. 208); Brisbane; Cairns. New Guinea: Dume Island (British Museum, *vide* Monod). Louisiade Archipelago (British Museum, *vide* Monod).

CODONOPHILUS Haswell

CODONOPHILUS IMBRICATUS (Fabricius)

Codonophilus imbricatus Hale, Trans. Roy. Soc. S. Aust., 50, 1926, p. 223, fig. 15 a-k and 16 a-f (*syn.*).

Localities—New South Wales: Shoalhaven Bight, 15-45 fathoms (E. 6599). South Australia: South-east of Flinders Island, 37 fathoms (E. 6744) and 15 miles north-west of Cape Jervis, 16 March 1909 (E. 4841).

LIVONECA Leach

LIVONECA RAYNAUDII H. M. Edwards

Livoneca raynaudii Hale, Trans. Roy. Soc. S. Aust., 50, 1926, p. 215, fig. 10 (*syn.*).

Twenty-eight examples of this common form. The largest is 50 mm. in length.

Localities—New South Wales: Shoalhaven Bight, 14-45 fathoms, 16 March 1909, one from opercle of *Zeus australis* (E. 288, E. 4854, and E. 6598). Victoria: off Gabo Island, about 200 fathoms (E. 4762 and E. 4836); Gabo Island to Cape Everard Ground, 20-250 fathoms (E. 6319); 40 miles south to south-west of Mount Cam, 70-100 fathoms (E. 6318 and E. 5433). South Australia: 50 miles south of Cape Wiles, 75 fathoms (E. 4864); south-east of Flinders Island, 37 fathoms, 30 August 1909 (E. 6743). Tasmania: off Tasman Head, Brunj Island, 80-100 fathoms, 21 March 1914 (E. 6597); Entrance to Oyster Bay 30 August 1909 (E. 5684); off Tasmanian coast (E. 6746); off west coast, 77 fathoms, on Banded Perch (E. 5354); off east coast of Flinders Island, Bass Strait (E. 6737); Eastern Slope, Bass Strait (E. 6750).

OUROZEUKTES H. Milne Edwards

OUROZEUKTES BOPYROIDES (Lesueur)

Cymothoa bopyroides Lesueur, Bull. Sci. Soc. Philom. Paris, 1814, p. 46, pl. ii, fig. 12 a-l.

Ourozeuktes owenii M. Edw., Hist. Nat. Crust., 3, 1840, p. 276, pl. xxxiii, fig. 8; Hale, Trans. Roy. Soc. S. Aust., 50, 1926, p. 227, fig. 17-19 (*syn.*).

Lesueur's paper "Sur une nouvelle espece d'insecte du genre *Cymothoa* de Fabricius" is not available in Australia, but Dr. T. Monod informs me that the figures of *Cymothoa bopyroides* leave no doubt whatever as to the identity of the species. It was found in a "Balistopode de la terre de Whit (Nouvelle Hollande)".

Three specimens are included in the "Endeavour" collection. One is larger than any previously examined by me, being 60 mm. in length and 40 mm. in width.

Localities—Victoria: Gabo Island to Cape Everard Ground, 20-250 fathoms (E. 6780). Great Australian Bight: 127° east, 80-120 fathoms (E. 3743), and 60-80 miles west from Eucla (E. 6759).
